

**HIGH-VOLTAGE MOS TRANSISTOR AND METHOD
FOR FABRICATING THE SAME**

ABSTRACT

[0036] A method for fabricating a high-voltage MOS transistor. A first doping region with a first dosage is formed in a substrate. A gate structure is formed overlying the substrate and partially covers the first doping region. The substrate is ion implanted using the gate structure as a mask to simultaneously form a second doping region with a second dosage within the first doping region to serve as a drain region and form a third doping region with the second dosage in the substrate to serve as a source region. A channel region is formed in the substrate between the first and third doping regions when the high-voltage MOS transistor is turned on to pass current between the source and drain regions, where a resistance per unit length of the channel region is substantially equal to that of the first doping region. A high-voltage MOS transistor is also disclosed.